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Antibiotics from basidiomycetes XLI. Clavicoronic acid, a novel inhibitor of reverse transcriptases from *Clavicorona pyxidata* (Pers. ex Fr.) Doty.
GERHARD ERKEL, TIMM ANKE, ALBERTO GIMENEZ & WOLFGANG STEGLICH .....(1): 29~37
Quartromicin, a complex of novel antiviral antibiotics. I. Production, isolation, physico-chemical properties and antiviral activity.
MITSUAKI TSUNAKAWA, OSAMU TENMYO, KOJI TOMITA, NOBUAKI NARUSE, CHIKAKO KOTAKE, TAKEO MIYAKI, MASATAKA KONISHI & TOSHIKAZU OKA .....(2): 180~188
A new antiherpetic agent, AH-135Y, produced by *Streptomyces albovinaceus* strain No. AH-135.
MASARU UYEDA, MOTOI AOKI, KUNIKO NAKAJIMA, CHINATSU SHIROMOTO, NOBUKO TATSUGUCHI, KAZUMI YOKOMIZO, YUTAKA KIDO & YOICHIRO KINO .....(8): 1370~1372
New antiviral antibiotics, cycloviracins B_1 and B_2. I. Production, isolation, physico-chemical properties and biological activity.
MITSUAKI TSUNAKAWA, NOBUJIRO KOMIYAMA, OSAMU TEMNYO, KOJI TOMITA, KIMIO KAWANO, CHIKAKO KOTAKE, MASATAKA KONISHI & TOSHIKAZU OKI .....(9): 1467~1471

ANTIFUNGAL SUBSTANCES

Antifungal anthracycline antibiotics, spartanamicins A and B from *Micromonospora* sp.
MURALEEDHARAN G. NAIR, SAROJ K. MISHRA, ALAN R. PUTNAM & RAMESH C. PANDEY .....(11): 1738~1745
A new series of natural antifungals that inhibit P450 lanosterol C-14 demethylase. I. Taxonomy, fermentation, isolation and structural elucidation.

Shoko Matsukuma, Tatsuo Ohtsuka, Hiromichi Kotaki, Haruyoshi Shirai, Takashi Sano, Kimihiro Watanabe, Noboru Nakayama, Yoshiko Itezono, Morio Fujiu, Nobuo Shimma, Kazuteru Yokose & Toru Okuda .....(2): 151~159

Lanomycin and glucolanomycin, antifungal agents produced by *Pycnidiophora dispersa*. I. Discovery, isolation and biological activity.
Joseph O'Sullivan, Douglas W. Phillipson, Donald R. Kirsch, Susan M. Fisher, Margaret H. Lai & William H. Trejo .....(3): 306~312

Aranorosinol A and aranorosinol B, two new metabolites from *Pseudoarachniotus roseus*: Production, isolation, structure elucidation and biological properties.
Kirity Roy, E. K. S. Vijayakumar, Triptikumar Mukhopadhyay, Sugata Chatterjee, R. G. Bhat, J. Blumbach & Bimal N. Ganguli .....(10): 1592~1598

Desertomycin B, a new desertomycin related antibiotic.
Rossella Bortolo, Silvia Spera & Giorgio Cassani .....(6): 1016~1019

Butyrolactols A and B, new antifungal antibiotics. Taxonomy, isolation, physico-chemical properties, structure and biological activity.
Chikako Kotake, Tetsuro Yamasaki, Toshio Moriyama, Mieko Shinoda, Nobujiro Komiyama, Tamotsu Furumai, Masataka Konishi & Toshikazu Oki .....(9): 1442~1450

Nannochelins A, B and C, new iron-chelating compounds from *Nannocystis exedens* (myxobacteria). Production, isolation, physico-chemical and biological properties.
Brigitte Kunze, Wolfram Trowitzsch-Kienast, Gerhard Höfle & Hans Reichenbach.....(2): 147~150

Sch 42137, a novel antifungal antibiotic from an *Actinoplanes* sp. Fermentation, isolation, structure and biological properties.
R. Cooper, I. Truumees, I. Gunnarsson, D. Loebenberg, A. Horan, J. Marquez, M. Patel, V. Gullo, M. Puar, P. Das & S. Mittelman .....(4): 444~453

Production and biological activities of a new antifungal antibiotic, TAN-950 A.
Seiji Hakoda, Shigetoshi Tsubotani, Takashi Iwasa, Masaru Suzuki, Masahiro Kondo & Setsuo Harada .....(6): 854~860

Macrolactams: A novel class of antifungal antibiotics produced by *Actinomadura* spp. SCC 1776 and SCC 1777.
V. Hegde, M. Patel, A. Horan, V. Gullo, J. Marquez, I. Gunnarsson, F. Gentile, D. Loebenberg, A. King, M. Puar & B. Pramanik .....(5): 624~632

Macrolactams: Two novel homologous series of compounds produced by *Actinomadura* sp. SCC 1778.
R. Cooper, I. Truumees, R. Yarborough, D. Loebenberg, J. Marquez, A. Horan, M. Patel, V. Gullo, M. Puar & B. Pramanik .....(5): 633~638

Deoxymulundocandin—A new echinocandin type antifungal antibiotic.
Triptikumar Mukhopadhyay, Kirity Roy, R. G. Bhat, S. N. Sawant, J. Blumbach, B. N. Ganguli, H. W. Fehlhaber & H. Kogler.....(5): 618~623

Pneumocandins from *Zalerion arboricola*. I. Discovery and isolation.
Robert E. Schwartz, David F. Sesin, Henry Joshua, Kenneth E. Wilson, August J. Kempf, Kent A. Goklen, Daniel Kuehner, Patrick Gailliot, Carolyn Gleason, Raymond White, Edward Inamine, Gerald Bills, Peter Salmon & Lauretta Zitano .....(12): 1853~1866

Pneumocandins from *Zalerion arboricola*. II. Modification of product spectrum by mutation and medium manipulation.
Prakash S. Masurekar, Jimmy M. Fountoulakis, Thomas C. Hallada, Margaret S. Soda & Louis Kaplan .....(12): 1867~1874

Sphingofungins A, B, C, and D; a new family of antifungal agents. I. Fermentation, isolation, and biological activity.
Frank VanMiddlesworth, Robert A. Giacobbe, Maria Lopez, George Garrity, Judith A. Bland, Ken Bartizal, Robert A. Fromtling, Jon Polishook, Marcia Zweerink, Ann M. Edison, Walter Rozdilsky, Kenneth E. Wilson & Richard L. Monaghan .....(6): 861~867

Sphinogofungins E and F: Novel serinepalmitoyl transferase inhibitors from *Paecilomyces variotii*.
Wendy S. Horn, Jack L. Smith, Gerald F. Bills, Susan L. Raghoobar, Gregory L. Helms, Myra B. Kurtz, Jean A. Marrinan, Beth R. Frommer, Rosemary A. Thornton & Suzanne M. Mandala .....(10): 1692~1696

Antifungal cyclic peptides from the terrestrial blue-green alga *Anabaena laxa*. I. Isolation and

biological properties.
WALTER P. FRANKMÖLLE, LINDA K. LARSEN, FAITH R. CAPLAN, GREGORY M. L. PATTERSON, GEORG KNÜBEL, IRA A. LEVINE & RICHARD E. MOORE .....(9): 1451~1457
Metabolic products of microorganisms. 263. Nikkomycins S_z, S_x, So_z and So_x, new intermediates associated to the nikkomycin biosynthesis of *Streptomyces tendae*.
TRAUGOTT C. SCHÜZ, HANS-PETER FIEDLER, HANS ZÄHNER, MATTHIAS RIECK & WILFRIED A. KÖNIG .....(2): 199~206

ANTIBACTERIAL SUBSTANCES

Aldecalmycin, a new antimicrobial antibiotic from *Streptomyces*.
RYUICHI SAWA, YOSHIKAZU TAKAHASHI, SAKIKO ITOH, KAZUO SHIMANAKA, NAOKO MATSUDA, MASA HAMADA, TSUTOMU SAWA, HIROSHI NAGANAWA & TOMIO TAKEUCHI .....(1): 136~139
New polyenic antibiotics active against Gram-positive and Gram-negative bacteria.
VIII. Construction of synthetic medium for production of mono-chloro-congeners of enacyloxins.
TOSHIHIKO WATANABE, TAKEYOSHI SUGIYAMA, KOJI CHINO, TOMOKO SUZUKI, SUSUMU WAKABAYASHI, HIROYUKI HAYASHI, RYOKO ITAMI, JUN SHIMA & KAZUO IZAKI .....(4): 476~484
New polyenic antibiotics active against Gram-positive and Gram-negative bacteria.
VII. Isolation and structure of enacyloxin IVa, a possible biosynthetic intermediate of enacyloxin IIa.
TOSHIHIKO WATANABE, JUN SHIMA, KAZUO IZAKI & TAKEYOSHI SUGIYAMA .....(4): 575~576
A83016A, a new kinamycin type antibiotic.
TIM A. SMITKA, ROSANNE BONJOUKLIAN, THOMAS J. PERUN, Jr., ANN H. HUNT, RONALD S. FOSTER, JON S. MYNDERSE & RAYMOND C. YAO .....(4): 581~583
Tirandalydigin, a novel tetramic acid of the tirandamycin-sterptolydigin type. I. Taxonomy of the producing organism, fermentation and biological activity.
JAMES P. KARWOWSKI, MARIANNA JACKSON, ROBERT J. THERIAULT, GRANT J. BARLOW, LYLE COEN, DENA M. HENSEY & PATRICK E. HUMPHREY .....(7): 1125~1132
SF2457, a new antibiotic related to amicetin.
JIRO ITOH & SHINJI MIYADOH .....(6): 846~853
Sperabillins, new antibacterial antibiotics with potent *in vivo* activity.
Taxonomy, fermentation, isolation and biological activity.
NOZOMI KATAYAMA, YUKIMASA NOZAKI, SHIGETOSHI TSUBOTANI, MASAHIRO KONDO, SETSUO HARADA & HIDEO ONO .....(1): 10~19
Isolation and characterization of new peptide antibiotics, plusbacins A_1~A_4 and B_1~B_4.
JUN'ICHI SHOJI, HIROSHI HINOO, TERUAKI KATAYAMA, KOICHI MATSUMOTO, TATSUO TANIMOTO, TERUO HATTORI, ISAO HIGASHIYAMA, HIDEAKI MIWA, KIYOSHI MOTOKAWA & TADASHI YOSHIDA .....(6): 817~823
Mersacidin, a new antibiotic from *Bacillus*. Fermentation, isolation, purification and chemical characterization.
SUKUMAR CHATTERJEE, SUGATA CHATTERJEE, SHASHIKANT J. LAD, MAHESH S. PHANSALKAR, R. H. RUPP, B. N. GANGULI, HANS-WOLFRAM FEHLHABER & HERBERT KOGLER .....(6): 832~838
Galacardins A and B, new glycopeptide antibiotics.
MICHIKO TAKEUCHI, SHUJI TAKAHASHI, RYUZO ENOKITA, YOSHIHARU SAKAIDA, HIDEYUKI HARUYAMA, TAKEMICHI NAKAMURA, TOSHIAKI KATAYAMA & MASATOSHI INUKAI .....(3): 297~305
Sporeamicin A, a new macrolide antibiotic. I. Taxonomy, fermentation, isolation and characterization.
SATOSHI YAGINUMA, ATSUKI MORISHITA, KENYA ISHIZAWA, SAKAE MUROFUSHI, MITSUO HAYASHI & NAOKI MUTOH .....(5): 599~606
Isolation and characterization of sporeamicin B.
ATSUKI MORISHITA, SAKAE MUROFUSHI, KENYA ISHIZAWA, NAOKI MUTOH & SATOSHI YAGINUMA .....(5): 809~812
Isolation and characterization of sporeamicin C.
ATSUKI MORISHITA, SAKAE MUROFUSHI, KENYA ISHIZAWA, NAOKI MUTOH & SATOSHI YAGINUMA .....(6): 1011~1015
Mycinamicins, new macrolide antibiotics. XIII. Isolation and structures of novel fermentation products from *Micromonospora griseorubida* (FERM BP-705).
KENJI KINOSHITA, SATOSHI TAKENAKA, HIDEAKI SUZUKI, TOSHIRO MOROHOSHI & MITSUO HAYASHI .....(1): 1~9
Isolation and structure elucidation of new antibiotics related to angolamycin.

JUDIT KADAR-PAUNCZ, BENJAMIN PODÁNYI & GYULA HORVÁTH .....(8): 1231~1238
Dactylocyclines, novel tetracycline derivatives produced by a *Dactylosporangium* sp.
I. Taxonomy, production, isolation and biological activity.
J. SCOTT WELLS, JOSEPH O'SULLIVAN, CAROL AKLONIS, HELEN A. AX, ADRIENNE A. TYMIAK, DONALD R. KIRSCH, WILLIAM H. TREJO & PACIFICO PRINCIPE .....(12): 1892~1898
A new deoxyfusarubin produced by the fungus *Nectria haematococca*. Synthesis of the two isomeric deoxyanhydronaphthopyranones from toralactone.
DENISE PARISOT, MICHEL DEVYS & MICHEL BARBIER .....(11): 1799~1801

ANTIPARASTIC, GROWTH PROMOTIVE AND HERBICIDAL SUBSTANCES

CP-82,009, a potent polyether anticoccidial related to septamycin and produced by *Actinomadura* sp.
JOHN P. DIRLAM, ANNETTE M. BELTON, JON BORDNER, WALTER P. CULLEN, LIANG H. HUANG, YASUHIRO KOJIMA, HIROSHI MAEDA, SATOSHI NISHIYAMA, JOHN R. OSCARSON, ANTHONY P. RICKETTS, TATSUO SAKAKIBARA, JUNSUKE TONE, KATSUHITSU TSUKUDA & MAMORU YAMADA .....(3): 331~340
The production of semduramicin by direct fermentation.
EDWARD J. TYNAN, III, THEODORE H. NELSON, RICHARD A. DAVIES & WILLIAM C. WERNAU .....(5): 813~815
The isolation and structure of CP-120,509, a new polyether antibiotic related to semduramicin and produced by mutants of *Actinomadura roseorufa*.
JOHN P. DIRLAM, JON BORDNER, SHANG-POA CHANG, ANTONIO GRIZZUTI, THEODORE H. NELSON, EDWARD J. TYNAN & EARL B. WHIPPLE .....(9): 1544~1548
C-13β-Acyloxymilbemycins, a new family of macrolides. Discovery, structural determination and biological properties.
MARK A. HAXELL, BERNARD F. BISHOP, PATRICIA BRYCE, KENNETH A. F. GRATION, HAMIDA KARA, ROBERT A. MONDAY, MICHAEL S. PACEY, DAVID A. PERRY, YASUHIRO KOJIMA, HIROSHI MAEDA, SATOSHI NISHIYAMA, JUNSUKE TONE & LIANG H. HUANG .....(5): 659~670
A new anthelmintic cyclodepsipeptide, PF1022A.
TORU SASAKI, MASAYUKI TAKAGI, TAKASI YAGUCHI, SHINJI MIYADOH, TADAAKI OKADA & MASAO KOYAMA .....(5): 692~697
AB3217-A, a novel anti-mite substance produced by a strain of *Streptomyces platensis*.
KENJI KANBE, YAYOI MIMURA, TSUYOSHI TAMAMURA, SACHIYO YATAGAI, YASUNORI SATO, ATSUSHI TAKAHASHI, KIYOSHI SATO, HIROSHI NAGANAWA, HIKARU NAKAMURA, TOMIO TAKEUCHI & YOICHI IITAKA .....(4): 458~464
Isolation and structures of two novel anti-mite substances, AB3217-B and C.
KENJI KANBE, ATSUSHI TAKAHASHI, TSUYOSHI TAMAMURA, KIYOSHI SATO, HIROSHI NAGANAWA & TOMIO TAKEUCHI .....(4): 568~571
A83016F, a new member of the aurodox family.
TIM A. SMITKA, ROSANNE BONJOUKLIAN, THOMAS J. PERUN, Jr.. ANN H. HUNT, LAVERNE D. BOECK & RAYMOND C. YAO .....(4): 433~443
A10255, a complex of novel growth-promoting thiopeptide antibiotics produced by a strain of *Streptomyces gardneri*. Taxonomy and fermentation studies.
LAVERNE D. BOECK, DONNIS M. BERRY, FREDERICK P. MERTZ & ROGER W. WETZEL .....(8): 1222~1230
Herboxidiene, a new herbicidal substance from *Streptomyces chromofuscus* A7847. Taxonomy, fermentation, isolation, physico-chemical and biological properties.
MARGARET MILLER-WIDEMAN, NARINDER MAKKAR, MINHTIEN TRAN, BARBARA ISAAC, NANCY BIEST & RICHARD STONARD .....(6): 914~921

BIOLOGICAL SECTION

GENETICS, PRODUCTION AND TAXONOMY

The distribution of DNA sequences hybridizing with antibiotic production and resistance gene probes within type strains and wild isolates of *Streptomyces* species.
LESLEY PHILLIPS, ELIZABETH M. H. WELLINGTON, SARAH B. REES, LU SHU JUN & GREG P. KING .....(9): 1481~1491
Cloning of aklavinone biosynthesis genes from *Streptomyces galilaeus*.
NAOHIRO TSUKAMOTO, ISAO FUJII, YUTAKA EBIZUKA & USHIO SANKAWA .....(8): 1286~1294
Cloning and analysis of a gene (*sms13*) encoding sannamycin B-glycyltransferase from *Streptomyces sannanensis* and its distribution among actinomycetes.
TOSHIO OHTA, ERI HASHIMOTO & MAMORU HASEGAWA .....(7): 1167~1175
Studies on the biosynthesis of bialaphos (SF-1293). 14. Nucleotide sequence of phosphoenolpyruvate phosphomutase gene isolated from a bialaphos producing organism, *Streptomyces hygroscopicus*, and its expression in *Streptomyces lividans*.
TOMOMI HIDAKA, MAKOTO HIDAKA & HARUO SETO .....(12): 1977~1980
Isolation and characterization of furanomycin nonproducing *Streptomyces threomyceticus* mutants.
RONALD J. PARRY & NAIQUAN YANG.....(7): 1161~1166
Characterization of an inducible transport system for glycerol in *Streptomyces clavuligerus*. Repression by L-serine.
BALTASAR MIÑAMBRES, ANGEL REGLERO & JOSÉ M. LUENGO .....(2): 269~277
Production of bellenamine and new metabolites in a synthetic medium.
YOKO IKEDA, SHUICHI GOMI, MASA HAMADA, SHINICHI KONDO & TOMIO TAKEUCHI ..(11): 1763~1766
Improved production of pentostatin and identification of fermentation cometabolites.
H. D. HOLLIS SHOWALTER, RICHARD H. BUNGE, JAMES C. FRENCH, TIMOTHY R. HURLEY, ROBERT L. LEEDS, BOGUSLAWA LEJA, PETER D. MCDONNELL & COLIN R. EDMUNDS .....(12): 1914~1918
Biosynthesis of thiopeptide antibiotic A10255 in stirred reactors using a chemically defined medium supplemented with continuous nutrient feeds.
LAVERNE D. BOECK, MONTGOMERY E. FAVRET & ROGER W. WETZEL .....(8): 1278~1285
Effect of cobalt and cyanocobalamin on biosynthesis of A10255, a thiopeptide antibiotic complex.
MONTGOMERY E. FAVRET & LAVERNE D. BOECK .....(11): 1809~1811
Stimulation of polyether antibiotic production in streptomycetes by heptakis-2,6-di-*O*-methyl β-cyclodextrin.
HEIKO PATZELT, VERONIQUE GAUDET & JOHN A. ROBINSON .....(11): 1806~1808
Carbon catabolite regulation of gentamicin formation.
LAURA ESCALANTE, RINA GONZALEZ, ANA-MARIA OBREGON & SERGIO SANCHEZ .....(4): 465~469
Microbial production of 4-thiouridine.
TAKAAKI NISHIKIORI, SUMIKO HIRUMA, TAKASHI KUROKAWA, SEIICHI SAITO & NOBUYOSHI SHIMADA .....(8): 1376~1377
Characterization of sannemycin A-nonproducing mutants of *Streptomyces sannanensis*.
TOSHIO OHTA, ERI HASHIMOTO & MAMORU HASEGAWA .....(2): 289~291

BIOTRANSFORMATION AND BIOSYNTHESIS

Microbial transformation of immunosuppressive compounds. I. Desmethylation of FK506 and immunomycin (FR 900520) by *Actinoplanes* sp. ATCC 53771.
TOM S. CHEN, BYRON H. ARISON, LINDA S. WICKER, EDWARD S. INAMINE & RICHARD L. MONAGHAN .....(1): 118~123
The preparation of [2-deutero-3-fluoro-D-Ala^8]cyclosporin A by directed biosynthesis.
OTTO D. HENSENS, RAYMOND F. WHITE, ROBERT T. GOEGELMAN, EDWARD S. INAMINE & ARTHUR A. PATCHETT .....(1): 133~135
Microbial transformation of immunosuppressive compounds. II. Specific desmethylation of 13-methoxy group of FK 506 and FR 900520 by *Actinomycete* sp. ATCC 53828.
TOM S. CHEN, BYRON H. ARISON, LINDA S. WICKER & EDWARD S. INAMINE .....(4): 577~580

Pneumocandins from *Zalerion arboricola*. V. Glutamic acid- and leucine-derived amino acids in pneumocandin A_0 (L-671,329) and distinct origins of the substituted proline residues in pneumocandins A_0 and B_0.
AKINLOLU A. ADEFARATI, OTTO D. HENSENS, E. TRACY TURNER JONES & JAN S. TKACZ .....(12): 1953~1957
Enniatin synthetases from different fusaria exhibiting distinct amino acid specificities.
REMBERT PIEPER, HORST KLEINKAUF & RAINER ZOCHER .....(8): 1273~1277
Microbial conversion of milbemycins: 29-Hydroxylation of milbemycins by genus *Syncephalastrum*.
KEIKO NAKAGAWA, KAZUO SATO, YOSHIHISA TSUKAMOTO & AKIO TORIKATA .....(5): 802~805
Biosynthesis of griseolic acids: Incorporation of ^{13}C-labeled compounds into griseolic acid A.
SHUNICHI MIYAKOSHI, HIDEYUKI HARUYAMA, TETSUYA SHIOIRI, SHUJI TAKAHASHI, AKIO TORIKATA & MITSUO YAMAZAKI .....(3): 394~399
Biosynthesis of antibiotic 1233A (F-244) and preparation of [^{14}C]1233A.
HIDETOSHI KUMAGAI, HIROSHI TOMODA & SATOSHI ŌMURA .....(4): 563~567
Biosynthetic preparation of radioactively labeled erbstatin.
YUJI TABATA, MASAYA IMOTO & KAZUO UMEZAWA .....(8): 1382~1384
The squalestatins, novel inhibitors of squalene synthase produced by a species of *Phoma*. III. Biosynthesis.
CAROL A. JONES, PHILIP J. SIDEBOTTOM, RICHARD J. P. CANNELL, DAVID NOBLE & BRIAN A. M. RUDD .....(9): 1492~1498
Biosynthesis of bellenamine by *Streptomyces nashvillensis* using stable isotope labeled compounds.
YOKO IKEDA, HIROSHI NAGANAWA, SHINICHI KONDO & TOMIO TAKEUCHI .....(12): 1919~1924
Preparation of ^{13}C and ^{15}N labeled bellenamine and its degradation products.
YOKO IKEDA, HIROSHI NAGANAWA, SHINICHI KONDO & TOMIO TAKEUCHI .....(12): 1925~1929
Biosynthesis of ansatrienin by *Streptomyces collinus*: Cell-free transformations of cyclohexene- and cyclohexadienecarboxylic acids.
KEVIN A. REYNOLDS, PEI WANG, KRISTINE M. FOX & HEINZ G. FLOSS .....(3): 411~419
Lanomycin and glucolanomycin, antifungal agents produced by *Pycnidiophora dispersa*. III. Biosynthesis of lanomycin: ^{13}C NMR assignment and origin of the carbon skeleton.
BEVERLY REMSBURG, DOUGLAS W. PHILLIPSON & JOSEPH O'SULLIVAN .....(3): 420~423
Biosynthesis of benastatin A.
TAKAYUKI AOYAMA, HIROSHI NAGANAWA, YASUHIKO MURAOKA, TAKAAKI AOYAGI & TOMIO TAKEUCHI .....(11): 1767~1772
Biosynthesis of thiopeptide antibiotic A10255: Incorporation of isotopically-labeled precursors.
MONTGOMERY E. FAVRET, JONATHAN W. PASCHAL, THOMAS K. ELZEY & LAVERNE D. BOECK .....(9): 1499~1511
Studies on the biosynthesis of fosfomycin. 3. Detection of phosphoenolpyruvate phosphomutase activity in a fosfomycin high-producing strain of *Streptomyces wedmorensis* and characterization of its blocked mutant NP-7.
TOMOMI HIDAKA, HIDEKAZU IWAKURA, SATOSHI IMAI & HARUO SETO .....(6): 1008~1010
Studies on the biosynthesis of fosfomycin. 4. The biosynthetic origin of the methyl group of fosfomycin.
TOMOHISA KUZUYAMA, TOMOMI HIDAKA, KAZUMA KAMIGIRI, SATOSHI IMAI & HARUO SETO .....(11): 1812~1814
Studies on the biosyntesis of bialaphos (SF-1293) 12. C-P bond formation mechanism of bialaphos: Discovery of a *P*-methylation enzyme.
KAZUMA KAMIGIRI, TOMOMI HIDAKA, SATOSHI IMAI, TAKESHI MURAKAMI & HARUO SETO .....(5): 781~787
Studies directed towards the biosynthesis of the C_7N-unit of rifamycin B: Incorporation of [^{14}C(G)]quinic acid and [1,2-$^{13}C_2$]glycerol.
ROSE-MARIE MEIER & CHRISTOPH TAMM .....(3): 400~410
Isolation and identification of 3-propylidene-Δ^1-pyrroline-5-carboxylic acid, a biosynthetic precursor of lincomycin.
M. S. KUO, D. A. YUREK, J. H. COATS, S. T. CHUNG & G. P. LI .....(11): 1773~1777
Isolation and characterization of 10-deoxymethynolide produced by *Streptomyces venezuelae*.
RALPH H. LAMBALOT & DAVID E. CANE .....(12): 1981~1982
Biochemical studies on 2-deoxy-*scyllo*-inosose, an early intermediate in the biosynthesis of 2-deoxystreptamine. I. Chemical synthesis of 2-deoxy-*scyllo*-inosose and [2,2-$^2H_2$]-2-deoxy-

scyllo-inosose.
NORIAKI YAMAUCHI & KATSUMI KAKINUMA .....(5): 756~766
Biochemical studies on 2-deoxy-*scyllo*-inosose, an early intermediate in the biosynthesis of 2-deoxystreptamine. II. Quantitative analysis of 2-deoxy-*scyllo*-inosose.
NORIAKI YAMAUCHI & KATSUMI KAKINUMA .....(5): 767~773
Confirmation of *in vitro* synthesis of 2-deoxy-*scyllo*-inosose, the earliest intermediate in the biosynthesis of 2-deoxystreptamine, using cell free preparations of *Streptomyces fradiae*.
NORIAKI YAMAUCHI & KATSUMI KAKINUMA .....(5): 774~780
Neomycin biosynthesis: The incorporation of D-6-deoxyglucose derivatives and variously labelled glucose into the 2-deoxystreptamine ring. Postulated involvement of 2-deoxyinosose synthase in the biosynthesis.
SAYED K. GODA & MUHAMMAD AKHTAR .....(6): 984~994
Oxidation of deacetylcephalosporin C by deacetoxycephalosporin C/deacetylcephalosporin C synthase.
JACK E. BALDWIN, KEE-CHUAN GOH & CHRISTOPHER J. SCHOFIELD .....(8): 1378~1381

BIOACTIVITY, ACTION MECHANISM & RESISTANCE

Biologically Active Substances and Immunomodulators

WS-7338, new endothelin receptor antagonists isolated from *Streptomyces* sp. No. 7338.
II. Biological characterization and pharmacological characterization of WS-7338 B.
SUSUMU MIYATA, MICHIZANE HASHIMOTO, KEIKO FUJIE, MOTOAKI NISHIKAWA, SUMIO KIYOTO, MASAKUNI OKUHARA & MASANOBU KOHSAKA .....(1): 83~87
WS009 A and B, new endothelin receptor antagonists isolated from *Streptomyces* sp. No. 89009.
II. Biological characterization and pharmacological characterization of WS009 A and B.
SUSUMU MIYATA, MICHIZANE HASHIMOTO, KIEKO FUJIE, MIWAKO SHOUHO, KEIZO SOGABE, SUMIO KIYOTO, MASAKUNI OKUHARA & MASANOBU KOHSAKA .....(7): 1041~1046
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II. Biological and pharmacological properties of WS9326A and tetrahydro-WS9326A (FK224).
MICHIZANE HASHIMOTO, KENICHI HAYASHI, MASAKO MURAI, TAKASHI FUJII, MOTOAKI NISHIKAWA, SUMIO KIYOTO, MASAKUNI OKUHARA, MASANOBU KOHSAKA & HIROSHI IMANAKA .....(7): 1064~1070
Matlystatins, new inhibitors of typeIV collagenases from *Actinomadura atramentaria*. II. Biological activities.
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Novobiocin, an antagonist of leukotriene B_4.
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Immunomodulating properties of prodigiosin 25-C, an antibiotic which preferentially suppresses induction of cytotoxic T cells.
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Enhancement by concanavalin A of the suppressive effect of prodigiosin 25-C on proliferation of murine splenocytes.
TAKAO KATAOKA, JUNJI MAGAE, HIDEO NARIUCHI, MAKARI YAMASAKI & KAZUO NAGAI .....(8): 1303~1312
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Takao Kataoka, Junji Magae, Kunihiro Kasamo, Hiroyasu Yamanishi, Akira Endo, Makari Yamasaki & Kazuo Nagai .....(10): 1618~1625

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Inhibition of herpes simplex virus type 1 DNA polymerase by the natural product oosporein.
Brian J. Terry, Wen-Chih Liu, Christopher W. Cianci, Elizabeth Proszynski, Prabhavathi Fernandes, Karen Bush & Edward Meyers .....(2): 286~288
L-696,474, a novel cytochalasin as an inhibitor of HIV-1 protease. III. Biological activity.
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A new series of natural antifungals that inhibit P450 lanosterol C-14 demethylase. II. Mode of action.
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Pneumocandins from *Zalerion arboricola*. IV. Biological evaluation of natural and semisynthetic pneumocandins for activity against *Pneumocystis carinii* and *Candida* species.
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Kayoko S. Tsuchiya, Yukari Moriya, Makoto Hori, Osamu Itoh, Tomio Takeuchi, Hisao Ekimoto & Masaharu Hiratsuka .....(2): 282~285
Circumvention of multidrug resistance in human carcinoma KB cells by polyether antibiotics.
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Reveromycins, new inhibitors of eukaryotic cell growth. II. Biological activities.
Hidetoshi Takahashi, Hiroyuki Osada, Hiroyuki Koshino, Mutsumi Sasaki, Rie Onose, Masamichi Nakakoshi, Makoto Yoshihama & Kiyoshi Isono .....(9): 1414~1419
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RU 29 246, the active compound of the cephalosporin-prodrug-ester HR 916.
I. Antibacterial activity *in vitro*.
A. Bauernfeind, R. Jungwirth, E. Eberlein, N. Klesel, F. Adam, D. Isert, M. Limbert, A. Markus, E. Schrinner & G. Seibert .....(4): 505~520
RU 29 246, the active compound of the cephalosporin-prodrug-ester HR 916.
II. Stability to β-lactamases and affinity for pernicillin-binding proteins.
A. Markus, N. Klesel, T. Wollmann, D. Isert, M. Limbert, E. Schrinner, G. Seibert, A. Bauernfeind, R. Jungwirth, R. Wilhelm & R. Hakenbeck .....(4): 521~526
Conjugal transfer of imipenem resistance in *Bacteroides fragilis*.
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New polyenic antibiotics active against Gram-positive and Gram-negative bacteria. VI. Non-lactonic polyene antibiotic, enacyloxin IIa, inhibits binding of aminoacyl-tRNA to A site of ribosomes.
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Screening assays for protein synthesis inhibitors.
Clifford C. Hall, Anne Bertasso, John D. Watkins & Nafsika H. Georgopapadakou .....(10): 1697~1699
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RU 29 246, the active compound of the cephalosporin prodrug-ester HR 916. III. Pharmacokinetic properties and antibacterial activity *in vivo*.
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Cefclidin (E1040), a novel cephalosporin: Lack of selection of β-lactamase overproducing mutants in an *in vitro* pharmacokinetic model system.
Nao-aki Watanabe & Kanemasa Katsu .....(8): 1335~1345
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CHEMISTRY SECTION

STRUCTURE DETERMINATION

Biologically Active Microbial Products

NG-011 and NG-012, novel potentiators of nerve growth factor. II. The structure determination of NG-011 and NG-012.
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Eurystatins A and B, new prolyl endopeptidase inhibitors. II. Physico-chemical properties and structure determination.
Soichiro Toda, Chikako Kotake, Takashi Tsuno, Yukio Narita, Tetsuro Yamasaki & Masataka Konishi .....(10): 1580~1586

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Masahiro Hatsu, Hiroshi Naganawa, Takaaki Aoyagi & Tomio Takeuchi .....(7): 1084~1087

The structure of pyrizinostatin.
Masahiro Hatsu, Hiroshi Naganawa, Takaaki Aoyagi, Tomio Takeuchi & Yoshio Kodama .....(12): 1961~1962

TA-3037A, a new inhibitor of glutathione *S*-transferase, produced by actinomycetes. II. Structure determination.
Daisuke Komagata, Yasuhiko Muraoka, Ryuichi Sawa, Yoshikazu Takahashi, Hiroshi Naganawa, Tsutomu Sawa & Tomio Takeuchi .....(7): 1122~1124

Benastatins A and B, new inhibitors of glutathione *S*-transferase, produced by *Streptomyces* sp. MI384-DF12. II. Structure determination of benastains A and B.
Takayuki Aoyama, Hiroshi Naganawa, Yasuhiko Muraoka, Hikaru Nakamura, Takaaki Aoyagi, Tomio Takeuchi & Yoichi Iitaka .....(9): 1391~1396

WS-7338, new endothelin receptor antagonists isolated from *Streptomyces* sp. No. 7338. III. Structures of WS-7338 A, B, C and D and total synthesis of WS-7338 B.
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Cochinmicins, novel and potent cyclodepsipeptide endothelin antagonists from a *Microbispora* sp. II. Structure determination.
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The structure of nagstatin, a new inhibitor of *N*-acetyl-β-D-glucosaminidase.
Takayuki Aoyama, Hiroshi Naganawa, Hiroyuki Suda, Kazumichi Uotani, Takaaki Aoyagi & Tomio Takeuchi .....(9): 1557~1558

Secondary metabolites by chemical screening. 9. Decarestrictines, a new family of inhibitors of cholesterol biosynthesis from *Penicillium*. II. Structure elucidation of the decarestrictines A to D.
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Glisoprenins, new inhibitors of acyl-CoA: Cholesterol acyltransferase produced by *Gliocladium* sp. FO-1513. II. Structure elucidation of glisoprenins A and B.
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WF11605, an antagonist of leukotriene B_4 produced by a fungus. II. Structure determination.
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The structure of cyclooctatin, a new inhibitor of lysophospholipase.
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Reveromycins, new inhibitors of eukaryotic cell growth. III. Structures of reveromycins A, B, C and D.
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Absolute configuration of epiderstatin, a new glutarimide antibiotic produced by *Streptomyces pulveraceus*.
TADAMICHI SONODA, KIMIKO KOBAYASHI, MAKOTO UBUKATA, HIROYUKI OSADA & KIYOSHI ISONO .....(12): 1963~1965
APHE-1 and APHE-2, two new antimicrobial and cytotoxic antibiotics. II. Physico-chemical properties and structure elucidation.
M. L. FIDALGO, M. S. ARIAS, J. SOLIVERI & M. E. ARIAS .....(11): 1759~1762
A new tetracycline antibiotic with antitumor activity. II. The structural elucidation of SF2575.
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New antiviral antibiotics, cycloviracins B_1 and B_2. II. Structure determination.
MITSUAKI TSUNAKAWA, CHIKAKO KOTAKE, TETSURO YAMASAKI, TOSHIO MORIYAMA, MASATAKA KONISHI & TOSHIKAZU OKI .....(9): 1472~1480
Lanomycin and glucolanomycin, antifungal agents produced by *Pycnidiophora dispersa*.
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Pneumocandins from *Zalerion arboricola*. III. Structure elucidation.
OTTO D. HENSENS, JERROLD M. LIESCH, DEBORAH L. ZINK, JACK L. SMITH, CAROL F. WICHMANN & ROBERT E. SCHWARTZ .....(12): 1875~1885
Antifungal cyclic peptides from the terrestrial blue-green alga *Anabaena laxa*. II. Structures of laxaphycins A, B, D and E.
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New polyenic antibiotics active against Gram-positive and Gram-negative bacteria.
IV. Structural elucidation of enacyloxin IIa.
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Molecular structure and conformation of rifamycin S, a potent inhibitor of DNA-dependent RNA polymerase.
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The structure of CP-96,797, a polyether antibiotic related to K-41A and produced by *Streptomyces* sp.
JOHN P. DIRLAM, JON BORDNER, WALTER P. CULLEN, MARK T. JEFFERSON & LAURA PRESSEAU-LINABURY .....(7): 1187~1189
Protorubradirin, an antibiotic containing a *C*-nitroso-sugar fragment, is the true secondary metabolite produced by *Streptomyces achromogenes* var. *rubradiris*. Rubradirin, described earlier, is its photo-oxidation product.
BRIAN BANNISTER & BARBARA A. ZAPOTOCKY .....(8): 1313~1324
Studies on bottromycins. I. ^{1}H and ^{13}C NMR assignments of bottromycin A2, the main component of the complex.
MIYUKI KANEDA .....(5): 792~796
Structural characterization of bacitracin components by frit-fast atom bombardment (FAB) liquid

chromatography/mass spectrometry (LC/MS).
YOSHITOMO IKAI, HISAO OKA, JUNKO HAYAKAWA, KEN-ICHI HARADA & MAKOTO SUZUKI ..... (8): 1325~1334
Structures of new peptide antibiotics, plusbacins $A_1 \sim A_4$ and $B_1 \sim B_4$.
JUN'ICHI SHOJI, HIROSHI HINOO, TERUAKI KATAYAMA, YUZO NAKAGAWA, YUJI IKENISHI, KOJI IWATANI & TADASHI YOSHIDA ..... (6): 824~831
Sporeamicin A, a new macrolide antibiotic. II. Structure determination.
ATSUKI MORISHITA, KENYA ISHIZAWA, NAOKI MUTOH, TAMOTSU YAMAMOTO, MITSUO HAYASHI & SATOSHI YAGINUMA ..... (5): 607~612
Solid state thermal degradation products of rosaramicin.
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Dactylocyclines, novel tetracycline derivatives produced by a *Dactylosporangium* sp.
II. Structure elucidation.
ADRIENNE A. TYMIAK, HELEN A. AX, MARK S. BOLGAR, ALICIA D. KAHLE, MICHAEL A. PORUBCAN & NIELS H. ANDERSEN ..... (12): 1899~1906
Dactylocyclines, novel tetracycline derivatives produced by a *Dactylosporangium* sp.
III. Absolute stereochemistry of the dactylocyclines.
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SYNTHESES AND STRUCTURE-ACTIVITY RELATIONSHIPS

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The synthesis, antibacterial, and β-lactamase inhibitory activity of a novel asparenomycin analog.
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6α-Hydroxypenicillanic acid-*S*(*S*)-oxide and analogues: Synthesis and antimicrobial activity.
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New penem compounds with 5′-substituted pyrrolidinylthio group as a C-2 side chain; comparison of their biological properties with those of carbapenem compounds.
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Methylene (2*S*,5*R*)-6-(3-formylallylidene)penicillanate pivalate, a prodrug of a new β-lactamase inhibitor.
S. ADAM, R. THEN & P. ANGEHRN ..... (4): 587~588
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ETTORE PERRONE, DANIELA JABÉS, MARCO ALPEGIANI, BIANCA PATRIZIA ANDREINI, COSTRANTINO DELLA BRUNA, STEFANO DEL NERO, ROSARIA ROSSI, GIUSEPPINA VISENTIN, FRANCO ZARINI & GIOVANNI FRANCESCHI ..... (4): 589~594
Synthesis and biological properties of FCE 25199, a new oral penem.
MARCO ALPEGIANI, ANGELO BEDESCHI, FRANCO ZARINI, COSTANTINO DELLA BRUNA, DANIELA JABES, ETTORE PERRONE & GIOVANNI FRANCESCHI ..... (5): 797~801
Structure-activity relationships of carbapenem and penem compounds for the convulsive property.
MAKOTO SUNAGAWA, HARUKI MATSUMURA & MASATOMO FUKASAWA ..... (12): 1983~1985
Synthesis and *in vitro* activity of novel quaternary ammonium carbapenems: 2-Pyridiniopropyl and 1-pyridinioethyl carbapenems.
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Synthesis and biological properties of 1β-methylcarbapenems with *N*-methylpyrrolidinylthio group at C-2 position.
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N-Acyl 3-alkylidenyl- and 3-alkyl azetidin-2-ones: A new class of monocyclic β-lactam antibacterial agents. 1. Structure-activity relationships of 3-isopropylidene and 3-isopropyl analogs.
STEVEN J. BRICKNER, JEFFREY J. GAIKEMA, GARY E. ZURENKO, LAURA J. GREENFIELD, PETER R. MANNINEN & DEBRA A. ULANOWICZ ..... (2): 213~226

Synthesis and structure-activity relationships of a new series of cephalosporins, E1040 and related compounds.
Isao Sugiyama, Yuuki Komatsu & Hiroshi Yamauchi .....(1): 103~112
Studies on condensed-heterocyclic azolium cephalosporins. III. Synthesis and antibacterial activity of 7β-[2-(2-amino-5-substituted-thiazol-4-yl)-2(Z)-alkoxyiminoacetamido]-3-(condensed-heterocyclic azolium)methyl-3-cephem-4-carboxylates.
Tatsuo Nishimura, Yoshinobu Yoshimura & Akio Miyake .....(4): 485~499
Synthesis and antibacterial activities of new 3-phenoxymethylcephalosporins.
Kazuo Koyama, Shinichi Saito & Koichi Kojima .....(4): 535~541
Studies on condensed-heterocyclic azolium cephalosporins. IV. Synthesis and antibacterial activity of 7β-[5-amino-1,2,4-thiadiazol-3-yl)-2(Z)-alkoxyiminoacetamido]-3-(condensed-heterocyclic azolium)methyl cephalosporins including SCE-2787.
Akio Miyake, Yoshinobu Yoshimura, Masayoshi Yamaoka, Tatsuo Nishimura, Naoto Hashimoto & Akira Imada .....(5): 709~720
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Yoshinobu Yoshimura, Kiminori Tomimatsu, Tatsuo Nishimura, Akio Miyake & Naoto Hashimoto .....(5): 721~734
Synthesis and activity of 3-(isoxazolin-5-yl)- and 3-(isoxazol-4-yl)cephalosporins.
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Chihiro Yokoo, Akira Onodera, Hiroshi Fukushima, Kazuo Numata & Takatoshi Nagate .....(6): 932~939
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